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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,720	02/19/2004	Jack T. Oldham	1684-6036US (484-28684-US)	7639
24247	7590	03/12/2007	EXAMINER	
TRASK BRITT P.O. BOX 2550 SALT LAKE CITY, UT 84110			BOMAR, THOMAS S	
			ART UNIT	PAPER NUMBER
			3672	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/12/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/783,720

Applicant(s)

OLDHAM ET AL.

Examiner

Shane Bomar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-9, 11-74, 179-186 and 189-193 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-9, 11-74, 190 and 192 is/are allowed.
- 6) ☒ Claim(s) 179-186, 189, 191 and 193 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 179 and 191 are rejected under 35 U.S.C. 102(a) as being anticipated by paper # WOCD-0306-05 to McKay et al (paper #1) and paper # WOCD-0306-02 to Galloway (paper #2). Both papers were presented at the same conference and are directly related to one another.

Paper #1 discloses three types of casing bits, the DS 1, DS 2, and DS 3, wherein each bit has an inner profile, an outer profile, and a nose portion; at least one aperture formed in the nose portion of the casing bit and configured for delivering drilling fluid from an interior of the casing bit to an exterior thereof; a plurality of generally radially extending blades, or discrete cutting element retention structures, disposed on the nose portion, wherein at least one of the plurality of blades carries one or more cutting elements affixed thereto; and at least one gage section, the at least one gage section extending longitudinally from adjacent the nose portion of the casing bit (see Figs. 1-3, the Introduction, and the Background). Paper #2 goes on to provide further disclosure for the DS 3 bit embodiment.

Regarding claim 179, papers 1 and 2 disclose the further limitations of blades that have a plurality of retention structures (i.e., pockets), within each structure is a single cutting element, such as a cutting insert (see Figs. 3 and 4 of paper #2, and Figs. 1-4 of paper #1).

Regarding claim 191, Figures 2 and 3 of paper #1, as well as Figures 3 and 4 in paper #2, show grooves behind and between the cutting elements on the blades. These grooves would inherently cause the bit face to break into sections when the next drill bit drills through the first bit.

3. Claims 179-186 and 189 are rejected under 35 U.S.C. 102(b) as being anticipated by US 6,062,326 to Strong et al.

Regarding claim 179, Strong et al disclose a casing bit that has an inner profile, an outer profile, and a nose portion; at least one aperture 52 formed in the nose portion of the casing bit and configured for delivering drilling fluid from an interior of the casing bit to an exterior thereof; a plurality of generally radially extending blades 42, or discrete cutting element retention structures, disposed on the nose portion, wherein at least one of the plurality of blades carries one or more cutting elements affixed thereto; and at least one gage section 46, the at least one gage section extending longitudinally from adjacent the nose portion of the casing bit (see Figs. 3-5). Since the bit is made to be drilled out, then it would have to have an inner profile that is configured to receive, and correspond to, the profile of the subsequent drill bit that is lowered into the first bit. Otherwise, the bit would not be able to be drilled out. Each cutter is carried by a plurality of retention structures, or pockets, in the blades 42 (see also col. 4, lines 26-28).

Regarding claims 180-184, Strong et al disclose the same limitations as in claim 179 above, with the additional limitation that the gage section 46 is configured to extend longitudinally adjacent a portion of casing section 32 when the bit 44 is secured to the casing section (see Fig. 3 and 4). Furthermore, the casing bit inherently comprises threads for securing the bit to the casing section through a connection to the stabilizer when said stabilizer has its own

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threaded box and pin (i.e., the bit could only be attached to the threaded box or pin with its own complementary threads; see col. 4, lines 54-59).

Regarding claims 185 and 186, as is notoriously known in the art, the inserts in the casing bit will act as percussive bits with any up and down motion experienced by the casing, which could happen if the bit were to encounter material that makes it bounce, or if the string experienced a sticking situation and had to be slid up and down within the hole.

Regarding claim 189, Strong et al disclose the same limitations as in claim 179 above, with the additional limitation that a first plurality of cutting elements 44 are configured to initially engage and drill through a first region and to substantially wear away while drilling through the first region; and a second plurality of cutting elements 48 configured to engage and drill through a second region to be subsequently encountered by the casing bit, at least one cutting element of the second plurality of cutting elements comprising a polycrystalline diamond cutting element and positioned in rotational alignment (since they are on the same blade together) with at least one cutting element of the first plurality of cutting elements comprising a tungsten carbide cutting element (see Fig. 3 and col. 4, lines 1-15). Since cutting elements 44 are made of the same material (tungsten carbide) as the Applicant's first cutting elements they must inherently wear away in the same fashion as that currently being claimed.

#### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claim 193 is rejected under 35 U.S.C. 103(a) as being unpatentable over McKay et al (papers from above) or Strong et al in view of US 2,215,913 to Brown.

Both McKay et al and Strong et al teach a drillable casing bit with at least one aperture, at least one gage section, and a plurality of radially extending blades, as seen in the 35 USC 102 rejections above. However, it is not specifically taught that at least one of an incendiary agent, an explosive agent, and a reactive chemical renders the bit more drillable.

Brown teaches drillable casing installed in a borehole similar to that of either McKay et al or Strong et al. It is further taught that the drillable casing is rendered more drillable by explosives and/or chemicals (see page 2, col. 1, lines 42-44). It would have been obvious to one of ordinary skill in the art, having the teachings of McKay et al or Strong et al and Brown before him at the time the invention was made, to modify the drillable casing bit taught by McKay et al or Strong et al to include the explosive agent and/or chemical agent of Brown. One would have been motivated to make such a combination since the references address the narrow problem of making portions of downhole casing drillable by a subsequent drilling operation; therefore, a

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person seeking to solve that exact problem would consult the references and apply their teachings together.

***Allowable Subject Matter***

7. Claims 1-9, 11-74, 190, and 192 are allowed.

***Response to Arguments***

8. Applicant's arguments, see pages 18-22, filed January 19, 2007, with respect to claim 1 and its dependents have been fully considered and are persuasive. The rejection of claim 1 and any dependent claims has been withdrawn.

9. Applicant's arguments, see page 23 and, filed January 19, 2007, with respect to the rejection(s) of claim(s) 189 and 193 under 35 USC 102(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Strong et al or Brown.

10. Applicant's arguments with respect to claims 179 and 191 have been fully considered but they are not persuasive.

a. With respect to claim 179, the Applicant argues that neither McKay et al or Strong et al teach a plurality of discrete cutting element retention structures because pockets are not seen as structures. The Examiner cannot determine why the Applicant does not consider a cutter pocket as a structure. To the Examiner's understanding, a pocket provides a supported area into which the cutting element is attached to the bit face. Without this pocket, the cutting element would be exposed to much greater forces

and be easily dislodged from the face, rendering the bit useless. Therefore, cutter element pockets must be considered as “structures”. Nevertheless, it is still notoriously known to those skilled in the art that each cutting element is attached to its own discrete substrate structure before it is attached to the cutting face of the bit.

b. With respect to claim 191, the Applicant argues that McKay et al does not teach “at least one groove sized and *configured to preferentially facilitate* failure of *at least a portion* of the casing bit into sections” (emphasis added). The Applicant points to Figures 9 and 12 of Paper 1 to show that the blades remain fully intact, yet bent, after the bit has been displaced. Thus, the Applicant asserts that the grooves do not cause the blades to break into sections when being drilled through. This argument is more limiting than the claim itself because it is not the blades that are being referred to but the casing bit itself, wherein only a portion of the bit need be configured to preferentially facilitate failure. It must be first noted that the use of the word “preferentially” means that it is only preferred that the facilitation of failure occurs, but does not necessarily mean that it does have to occur. The figures that the Applicant is relying upon clearly show that the face of the casing bit has failed at the grooves in between each of the blades after displacement of the bit. Nevertheless, it was Figures 2 and 3 of Paper 1 and Figures 3 and 4 of Paper 2 that the Examiner relied upon, with the figures of Paper 2 providing the best disclosure. Figures 3 and 4 of Paper 2 clearly show grooves between each cutter on the face of the bit, a groove between the gage area and the face, and even multiple grooves in between each of the diamonds impregnated in the bit face. When drilled



through, any one of these grooves will cause at least a portion of the casing bit to fail into sections.

### *Conclusion*

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shane Bomar whose telephone number is 571-272-7026. The examiner can normally be reached on Monday - Thursday from 6:00am to 2:30pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



David J. Bagnell  
Supervisory Patent Examiner  
Art Unit 3672

tsb



March 5, 2007